8.

Jon. H. S. Age 57. Admitted to Hospital March 19th, 1917, at 1 a. m. No history of previous stomach trouble. Present illness began at 9 p. m. March 18th, with a severe sharp stabbing pain in Epigastrium. The pain has continued without relief.

Examination: Board-like rigidity over entire abdomen, more marked in Hypogastrium. Extreme tenderness on pressure over a point one inch above umbilicus in mid line. Diagnosis of perforating ulcer was made.

Operation, 10 a. m., March 19th, revealed perforating ulcer of duodenum. Perforation sutured. Abdomen closed without drain. Recovery uneventful.

Time elapsing between perforation and operation, 13 hours.

During the past few years I have operated on three other cases and assisted at operation on a fourth. All were operated upon within a few hours after perforation. Three were closed without drainage and made uneventful recoveries.

The fourth was drained with a cigarette drain between liver and duodenum, supplemented by narrow strip of gauze packed against the suture line. This was done on account of inability to securely close the perforation, the stitches cutting through an unusual amount of indurated tissue, which surrounded the perforation.

This man died suddenly one month after operation from pulmonary embolism. There was a discharging sinus present at the time.

Medical Building.

TREATMENT OF THE DIPHTHERIA CARRIER, WITH SPECIAL REFERENCE TO TONSILLECTOMY AND ADENOIDECTOMY.

With Report of 12 Cases.

By FRANK E. DETLING, M. D., Los Angeles.

What to do with the diphtheria carrier is a problem, perplexing to doctors, health and hospital authorities, and most trying, inconvenient and expensive to patient.

The diphtheria carrier plays havoc with hospitals, especially institutions that limit their patients to children, frequently closing part or all of same, infecting and disorganizing the hospital forces, prolonged occupying of beds in the contagious departments, which are usually too limited even for ordinary requirements. The frequency of its unheralded appearance and general disturbance it plays, makes it customary to take throat cultures of all children as they enter children's wards, besides keeping them under observation for a limited time. In fact I know of no other factor that plays such ruin with hospital efficiency. The danger of exposure to cross infection in keeping children in contagious wards, is another complication of the diphtheria carrier. The prolonged quarantine of adults or occasionally of entire family frequently becomes a distressing economic question. The oft-repeated question, "How much longer must I remain in quarantine?" becomes a burning problem to a patient otherwise well and whose only offense is that of being charged with having a positive diphtheria throat.

Hence, any treatment that will in any way shorten the quarantine period of these patients will always be welcome.

Writers differ somewhat as to the definition of the diphtheria carrier; some including only those cases that harbor the diphtheria bacilli in nose and throat, but who have no history of sore throat, or other symptoms of diphtheria, and who give a negative Shick test; others include those cases that harbor the diphtheria bacilli for a prolonged period after the clinical symptoms have disappeared. For our consideration we will accept the more comprehensive definition.

From various investigations, by reliable sources, it has been shown that from one to three per cent. of all persons harbor the diphtheria bacilli in their throats, and that this percentage runs considerably higher during epidemics of diphtheria. The virulency of these carriers seems to differ to a considerable degree, being quoted as varying from 20 to 80 per cent.

VARIOUS TREATMENTS.

I presume all of our antiseptic drugs have been tried in some form or manner for the cure of the diphtheria carrier, none having proven themselves entirely efficient. The most used antiseptics being iodine, phenol, silver nitrate, formaldehyde, alcohol, all tried in various strengths and in various manners. Kaolin, dried and finely powdered, has been favorably reported on by Dr. Hektoen and Rappaport; it has no antiseptic qualities, but its virtue apparently being due to its absorptive and mechanical powers.

The spraying of the throat with various nonpathogenic bacteria, such as the staphylococcus pyogenes aureus, bacillus Bulgaricus, lactic acid producing bacilli and others, has been advocated and tried, the expectant result being the overriding of the diphtheria bacilli. This treatment seemed for a while to have solved the problem and the results as a whole quite favorable, although there is a tendency for a return of the diphtheria bacilli if not repeatedly sprayed. Vaccine and serum have also been tried with varied success, but the advocates of the various kinds of treatment all admit the inefficiency and failure in a certain percentage of cases. What to do with the failures is the vexing problem. Authorities admit that in certain cases the infection gets down deep into the crypts of the tonsils or crevices of adenoids, occasionally in sinuses of the nose, and the removal of any of these pathological conditions is the general advice given, after the unsuccessful efforts of their favorite method of treatments.

REPORT OF CASES.

Case 1. Miss M., graduate nurse at Children's Hospital. Moderate attack of diphtheria. Was given antitoxin, throat treated with all forms of sprays, gargles and swabs. In quarantine for five weeks. Could not get a negative culture. Tonsils large and crypts filled with cheesey deposits. With the removal of tonsils there were no future positive throat cultures.

Case 2. Miss A., school teacher. Came to office complaining of sore throat. She was sent to Health Department for throat culture which proved positive. Was taken in charge by a general practitioner. Had a very mild attack. She was given various post diphtheretic treatments closely following the treatment suggested by the Health Department of Los Angeles. After four weeks of quarantine I was asked to see patient in regard to doing a tonsillectomy. Patient was very reluctant to give consent to any operative suggestions, as the tonsils were small and patient gave no history of any previous sore throat excepting that of her diphtheria attack. She was in quarantine at the Clark Memorial Home and her quarantine was much like that of solitary confinement, not the usual home quarantine. After another week's delay, the tonsils were removed and no further positive cultures were found.

Case 3. Mr. J. C., age 24, drug clerk. Moderate attack of diphtheria, all clinical symptoms disappearing in a few days. Repeated examinations for six weeks showed positive cultures. Perfectly well otherwise. Tonsils and adenoids moderate size. Negative culture on 2-4-10 day after operation.

Case 4. A. B., age 10 years. Moderate attack of diphtheria, usual treatment. In quarantine seven weeks. Large tonsils and adenoids. Negative culture on 4-6 days after operation.

Case 5. Family in which girl age seven had diphtheria, in which three others of family became true diphtheria carriers. Patient had fairly severe attack of diphtheria, clinical symptoms lasting six days. Positive culture two weeks. The question of having tonsils and adenoids removed having been debated previous to the diphtheria attack, it was decided to remove same although in less time than is customary to advocate the operative procedure. Throat gave a negative culture on the 4th and 6th days after operation. Before quarantine was raised, culture of throats of family was taken and showed that the mother and two other children had the diphtheria bacilli in throat, but no clinical symptoms were evident. All treatments suggested were conscientiously tried, mother being a trained nurse, and after one month of unsuccessful efforts, the tonsils and adenoids were removed in the three carriers, mother and two children, with no positive cultures after operation.

Case 6. Miss J., age 16, at isolation ward of L. A. County Hospital. In hospital six weeks, clinical symptoms only for a short time. In this case Fuller's earth was tried most conscientiously for ten days without result. She also had gargles, sprays and swabs. Was out of hospital in a week's time after operation.

Case 7. Mrs. A., age 30, at isolation ward of County Hospital. Sore throat for a few days. Culture positive. Given diphtheria antitoxin. In quarantine three weeks when tonsils were removed under local anesthetic. Operation February 8, 1918. Positive culture the 12-14 and 16th. Negative after the 18th of February, patient having shown positive culture for ten days after the operation.

Case 8. Miss G., age 24, at isolation ward of County Hospital. No clinical symptoms, but found to be a diphtheria carrier. She was one of nine cases that were taken to isolation ward from County Jail where they had been exposed to a case of diphtheria. In quarantine three weeks. Iodized phenol, hot saline gargle used. Operation February 8. This patient for twelve days following operation gave no two consecutive negative cultures, but did give a negative culture several times during the first twelve days, but not until after the twelfth day did we have a throat free of the diphtheria bacillus.

Case 9. Mrs. C., age 23, at isolation ward of County Hospital. Sore throat for several days. Positive diphtheria culture. Antitoxin, iodized phenol, hot saline gargles were given. Operation February 8, 1918. No positive cultures after operation.

In the series of twelve cases, ten gave no further positive cultures after the removal of tonsils; remembering that all of them had been in quarantine from three to six weeks and various forms of treatment tried. Case 7 did not clear up for ten days after the operation. Case 8 did not give consecutive negative culture until twelve days after the operation, although the throat gave a negative report several days, but followed by a positive the next day.

CONCLUSIONS.

That the frequency of the diphtheria carrier renders it important in the interest of both patient and public health to rid patient of the diphtheria infection as soon as possible.

That antiseptics and biological products are as a rule effective in clearing the throat of diphtheria bacilli, but inefficient where the infection is due to some pathological condition in nose and throat.

No adverse or unusual results were noted following the operative method and none were found reported in literature, a certain immunity in all probability explaining why we do not have a greater reaction with the virulent bacilli in throat. The removal of the foci of infection is without doubt the important factor in clearing the throat of the diphtheria bacilli, although a second factor may play an important role, and that is the *non-pathogenic* bacteria normally in the throat, taking on a rapid growth due to the post-operative conditions, thus *overriding* the diphtheria bacilli.

That the diphtheria bacilli are usually found in pure culture in crypts of tonsils that have been removed from the carrier.

That no treatment yet advocated or tried has proved successful in all cases, but that the removal of the tonsils and adenoids gives the most satisfactory results.

That the operative method has had sufficient trial to give it a recognized standing with the assurance that it has the endorsement of many of the best health authorities.

That we can and should recommend operative procedures, especially in cases that show any pathological condition and that have failed under other treatment.

THE USE OF HOMATROPIN IN REFRACTION.

By PERCY SUMNER, M. D., San Francisco.

A number of years ago when I was in New York there was a paper read before The Academy of Medicine on the use of homatropin in refraction. As I was at that time a student in the office of the oculist who presented the paper I was naturally greatly interested in it, as I had had an opportunity of observing some of the conclusions on which the paper was based.

It amazed me to hear in the discussions that followed that several men seemed quite opposed to the use of homatropin or any other cycloplegic in refraction and contended that they got good results by giving the manifest correction, without the use of drops. As I was at that time fresh from Vienna, where the use of a cycloplegic in